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INDUSTRIAL PROSPECTS

IN ALBERTA

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Edmonton, 1969.

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FOREWORD

This publication is designed to provide a brief compendium of developments in each of Alberta's major industries.

A sense of perspective regarding these developments may be obtained from Table 1, (see overleaf), which compares the contribution of each major industry to the total net value of Alberta industrial production.

The Dominion Bureau of Statistics is the source for most of the statistical data contained herein. The opinions expressed are those of the writer.

TABLE 1

NET VALUE OF PRODUCTION IN COMMODITY - PRODUCING INDUSTRIES AND PERCENTAGE ANALYSIS, ALBERTA, AVERAGES 1956 - 1958 and 1966 - 1968

Industry	Average 1956-1958	Percentage of Total %	Average 1966-1968	Percentage of Total %	Growth Over Period %
Agriculture	337,427	22.8	603,745	22.2	78.9
Manufacturing	312,436	21.2	558,171	20.6	78.7
Mining	356,076	24.1	875,085	32.2	145.8
Construction	417,744	28.3	589,536	21.7	41.1
Electric Power	36,611	2.5	79,987	2.9	118.5
Other (1)	16,510	1.1	9,586	.4	(41.9)
TOTAL	1,476,804	100.0	2,716,110	100.0	83.9

(1) Comprised mainly of Forestry. The decline of this industry is only apparent, having resulted from conceptual change in the method of estimating Forestry production.

AGRICULTURE

The prospects for Alberta agriculture are, of course, directly tied to the Canadian and International grain situation.

The glut of grain, and particularly wheat, in world export markets precipitated a wave of price cutting during the first half of 1969 by signatory members of the International Grains Agreement.

The two to three year outlook for an improvement in export markets is not bright. According to the April 1969 edition of the D. B. S. Wheat Review:

"World wheat production in 1968 is estimated at a record 309 million tons, 11 per cent above 1967 and 8 per cent over 1966, the previous high. The world wheat harvest has increased 25 per cent in the last three years and the 1968 harvest was 33 per cent over the 1960-64 five-year average. Increased acreage, good weather, price assurances, and special programs have expanded wheat harvests around the world. The 1968 world wheat area reached a new high of 543 million acres, 2 per cent larger than in 1967 and 8 per cent greater than the 1960-64 average. A record wheat yield of 20.9 bushels per acre, was 3 per cent above the 1966 high and represented a gain of 24 per cent over the earlier five-year level."

Record world production is reflected in the rapid decline of Canadian exports over the past few years. Meanwhile, Canadian production has continued at historically high levels resulting in a substantial increase in stocks.

CANADIAN WHEAT PRODUCTION AND EXPORTS (1)
Crop Years 1965 - 66 to 1969 - 70 (2)
('000 bushels)

	Ten Year Average 1958-59 1967-68	1965-66	1966-67	1967-68	1968-69	1969-70
Production	560,400	649,412	827,338	592,920	649,844	684,276 (3)
Exports	402,900	584,906	515,307	336,010	305,800	n.a.

(1) Includes flour in terms of wheat equivalent
(2) Crop years ending August 31st.
(3) Estimated
n.a. Not Available

CANADIAN WHEAT STOCKS
1966 - 1969
('000 bushels)

	Ten Year Average 1959-68	1966	1967	1968	1969
Stocks (July 31)	531,112	420,122	576,751	665,510	848,284

Of course, wheat surpluses are nothing new to the Canadian farmer; they have come and gone. Our past surpluses, often regarded as chronic, eventually found markets.

The key factor in our export equation has been weather conditions in the major grain producing areas of the world. As in the past, eventual poor weather in some of these areas will likely allow our present surplus to be marketed.

The reactions of Alberta farmers to depressed export markets are mirrored in the following statistics:

- Alberta 1969 wheat acreage is estimated at 5,300,000 acres, down 18 per cent from the 6,460,000 acres planted during the spring of 1968. Summerfallow acreage is up from 7,000,000 acres to 7,400,000 acres, an increase of 6 per cent. Feed grain, (oats and barley) acreage is up from 7,300,000 acres to 7,700,000 acres, an increase of 5 per cent.
- According to a D.B.S. survey conducted in the early spring of 1969, Alberta farmers intend to use 2 per cent less fertilizer than was used in 1968.
- Estimated sales (at wholesale prices) of farm implements and equipment during 1968 were $91,236,000, down 15.9 per cent from estimated 1967 sales of $108,535,000. Sales for the seven month period January 1 to September 30, 1969 are down 6.3 per cent from the corresponding period in 1968.

The traditional response to depressed grain markets has been diversification into livestock. In contrast to grain, beef prices are currently firm and are expected to remain so.

About one-half of Alberta farm cash receipts are currently derived from livestock and livestock products sales. This will tend to ameliorate the effects of reduced crop receipts.

FARM CASH RECEIPTS FROM FARMING OPERATIONS
ALBERTA 1968

Source	($'000)	% of Total
Crops	371,474	45.8
Livestock & Products	425,215	52.4
Other	14,211	1.8
TOTAL	810,900	100.0

MANUFACTURING

The manufacturing sector contributes about one-fifth of the net value of production of all Alberta industries. Its growth over the past ten years has approximated that of all industries.

The value of shipments and percentage growth of the major industries comprising the manufacturing sector are compared in:

VALUE OF MANUFACTURERS SHIPMENTS AND PERCENTAGE GROWTH, BY INDUSTRY - ALBERTA
1958 and 1968

Industry	1958	1968	Growth Over Term
	($'000)	($'000)	%
Foods & Beverages	339,500	660,000	96.2
Petroleum Refining	106,500	153,000	43.7
Primary Metal (iron & steel, pipe and tube mills, smelting and refining)	37,200	140,000	276.3

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Industry	1958	1968	Growth Over Term
	($'000)	($'000)	%
Chemical & Chemical Products	47, 100	119, 000	152. 7
Non-Metallic Mineral Products (cement, clay glass, etc.)	47, 000	110, 000	134. 0
Metal Fabricating	46, 000	95, 000	106. 5
Wood (sawmills, sash & door, caskets, etc.)	40, 200	75, 000	86. 6
Transportation	26, 000	55, 000	111. 6
Paper & Allied Products (pulp, asphalt, roofing paper box and bag)	29, 000	51, 000	75. 9
Printing, Publishing & Allied Industries	26, 600	51, 000	91. 7
Clothing	10, 700	25, 000	133. 6
Electrical Products	4, 500	24, 000	433. 3
Machinery	3, 800	23, 000	505. 3
Furniture & Fixtures	8, 800	18, 000	104. 5
Textiles	8, 900	11, 000	23. 6
Miscellaneous (Plastic fabricators, rubber leather, and other)	6, 200	34, 000	448. 4
TOTAL	788, 000	1, 644, 000	108. 6

New Alberta manufacturing projects recently completed, under construction, or proposed with values in excess of $1, 000, 000 include:

Company	Expenditure Involved $	Products or Type of Operation	Stage of Development as at June 30, 1969
Alberta Distillers Ltd. Calgary	1, 000, 000 (Expansion)	Distillery	Completed
Art Laboratory Furniture Ltd., Edmonton.	1, 000, 000	Metal Furniture	Completed
Firestone Tire & Rubber Co. of Canada Ltd. Calgary	4, 000, 000 (Expansion)	Rubber Tires & Retreading	Completed
Imperial Oil Ltd., Redwater	60, 000, 000	Fertilizers	Completed
Northwest Nitro-Chemicals Ltd., Medicine Hat	1, 500, 000 (Expansion)	Fertilizers	Completed
B.A.C.M. Industries Ltd., Edmonton	4, 000, 000	Gypsum Wallboard	Under Construction
Canada Packers Ltd. Red Deer	3, 000, 000	Meat Packing	Under Construction
Federated Co-operatives Lumber Mill, Smith	1, 165, 000 (Expansion)	Kiln Drying	Under Construction
Gulf Oil Canada Ltd., Edmonton	75, 000, 000	Oil Refinery	Under Construction
Magadyne Industries Edmonton	1, 000, 000	Material Formulations	Under Construction
Palm Dairies Ltd., Calgary	2, 000, 000	Dairy Products	Under Construction
Steel Co. of Canada Ltd. Premier Works Edmonton	1, 300, 000 (Expansion)	Steel	Under Construction

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Company	Expenditure Involved $	Products or Type Of Operation	Stage of Developme as at June 30, 196
Kroehler Mfg. Co. Limited, Edmonton	2,000,000	Upholstered Furniture	Proposed
Mohawk Oil Co., Ltd., Edmonton	10,000,000	Oil Refinery	Proposed
Strong Wall Gypsum Industries Ltd., Redwater	3,500,000	Gypsum Wallboard	Proposed
York Farms Ltd., Lethbridge	1,500,000 (Expansion)	Frozen Foods	Proposed

According to a Dominion Bureau of Statistics survey, investment intentions by Alberta manufacturers for new plant and equipment in 1969 are down marginally from 1968 preliminary actual levels.

INVESTMENT EXPENDITURES IN MANUFACTURING INDUSTRIES
ALBERTA, 1967 - 1969
(millions of dollars)

	1967(1)	1968(2)	1969(3)
Food & Beverages	21.2	19.3	22.2
Wood	7.3	7.9	6.8
Metal Fabricating	3.4	3.2	4.4
Non-metallic Mineral Products	13.1	8.8	14.1
Other Manufacturing	68.4	100.0	87.6
TOTAL	113.4	139.2	135.1

(1) Actual
(2) Preliminary actual
(3) Intentions according to a D.B.S. survey made during May & June 1969.

In August, the Honourable Jean Marchand, Minister of Regional Economic Expansion, announced a new Regional Development Incentives Act. Under the Act, the Federal Government will contribute a portion of the monies expended for new plant and equipment by selected manufacturing industries. In Alberta, the area eligible for incentives comprises a region across the southern portion of the province, including Medicine Hat, Lethbridge, and the Drumheller-Hanna area.

Since each province in Canada has areas eligible for incentives, the Act will have little effect in attracting new industry that otherwise would not have situated in Alberta. The Act will however, play a significant role in location decisions made by industry within the province.

Looking towards the future, it is anticipated that the steady growth exhibited by the Alberta plastics industry during the past decade will accelerate as plastics technology opens new and more lucrative market horizons.

Due to the high cost of housing and the increasing mobility of our population, it is also expected that the Alberta trailer industry will show better than average growth. Expansion, however, will likely not be as phenomenal as it was during the sixties. In 1961, the value of Alberta trailer manufacturers' shipments totalled $2.9 million. In 1969 it is estimated the shipment value will approximate $60 million.

The new Regional Development Incentives Act may provide the required impetus to expand substantially the fresh vegetable processing industry in southern Alberta. Southern Alberta, having irrigation and suitable growing conditions in ideally situated to serve the Canadian fresh vegetable market.

There are currently a number of feasibility studies underway which could lead to a substantial increase in Alberta pulp production.

- Buckeye Cellulose Ltd., a subsidiary of Proctor and Gamble Company Ltd., are considering the feasibility of building a $50, 000, 000 kraft pulp mill south of Grande Prairie with an initial capacity of approximatley 200, 000 tons of bleached kraft pulp annually. If feasible, construction would begin in 1970 and be completed two to three years later.
- North West Pulp and Power Ltd., which currently operate the only pulp mill in the province at Hinton, are considering for the early 1970's a $50, 000, 000 expansion program which would more than double existing capacity of 600 tons per day. Also under consideration is a $4 million saw mill capable of producing approximately 50 million board feet of lumber per year.
- McMillan Bloedel Ltd., are considering constructing a $50, 000, 000 pulp mill near Whitecourt, about 120 miles north west of Edmonton.
- Two companies, Cominco Ltd., and Simpson Timber Co., are presently evaluating the potential of the Rocky Clearwater Forest in west central Alberta. This could lead to the construction of a pulp mill with a capacity of 600-800 tons per day.

To utilize the extensive poplar forest reserves in the Lesser Slave Lake area, a poplar wood products plant will be constructed at the town of Slave Lake in 1970. The Alberta Hardwoods Company Limited plant will initially produce kiln dried poplar lumber and furniture components and perhaps eventually poplar veneer if the timber proves suitable. Within the next five to ten years, it is possible that one or two additional wood products plants will be constructed in this area.

Instead of using scrap iron to charge steel making furnaces, it has been a long-standing desire in Alberta to have a pig iron production capability. This capability has not been realized to date for want of a suitable source of iron ore although the other major constituents for pig iron production, (coking coal and cheap power) are plentiful in Alberta. One iron ore deposit in the province is near Burmis, in the Crows Nest Pass area. This deposit, while of low grade, contains substantial quantities of titanium. If a process to separate titanium from iron ore becomes commercially feasible, the value of both of these minerals may support a mining operation.

A second possible source of iron ore for pig iron production is a consequence of the Japanese coking coal contracts, (see page 15). Alberta coal will be transported to the west coast port of Vancouver by unit trains. It is speculated that iron ore, if available in sufficient quality and quantity, could be back hauled by the returning unit trains at a very competitive rate.

MINING

Oil

There are a number of uncertainties facing the Alberta oil industry at the moment, the impact of the Prudhoe Bay discovery on crude markets in the United States being foremost amoung them.

Recent estimates of proven Alaskan reserves by 1985 are in the order of 30 billion barrels. By the time Alaskan crude reaches U.S. mainland markets, likely in 1972, it has been forecast that the United States will be consuming 5.3 billion barrels of oil annually. In the short run at least, it is possible that Alaskan production will diminish a portion of U.S. oil import requirements.

In this regard, the U.S. Presidential Task Force on oil import control is expected to report by the end of 1969 and their policy recommendations will have long range implications for Alberta's oil industry. It is expected that, for security reasons, Canadian oil will continue to be exempt from formal import control, and that "reasonable growth" of Canadian imports will continue to be allowed.

If for some reason, the United States does not adopt this policy, Alberta producers will press even harder for access into the Canadian market east of the Ottawa Valley, which is presently being supplied with cheaper, imported, (mainly Venezuelan) crude.

Approval or rejection of this proposed market extension could then depend upon the success or failure of the Panarctic Oils Limited exploration program currently underway in the Canadian north.

If Panarctic should discover reserves of Prudhoe Bay magnitude, it is very likely the market east of the Ottawa Valley will be reserved for Panarctic production.

The method by which this Panarctic crude is transported to market would then become of paramount importance to Alberta producers.

If the current Manhattan experiment to forge a commercial northwest passage through Canadian Arctic waters proves economically feasible, Panarctic crude would likely move to eastern markets by tanker.

If, on the other hand, the Manhattan experiment does not prove to be economically feasible, the crude could move by pipeline, likely to connect with an expanded version of the existing inter-provincial pipeline network. This possibly would allow Alberta producers to supplement Panarctic shipments.

The above list of unknowns are only capable of enumeration, their outcomes, being partially dependent upon natural forces, are not predictable.

What is known is that Syncrude Canada Limited, comprising a consortium of four major companies, including Atlantic Richfield Company, co-discoverer of the Prudhoe Bay field, show every indication of expending $200 million for a plant to extract oil from the Athabasca Oil Sands. An additional $100 million will be expended for generating facilities by Canadian Utilities Limited to supply the operation with electric power. The Syncrude plant will be at Mildred Lake, north of the existing Great Canadian Oil Sands operation near Fort McMurray, and has an authorized production of 80,000 barrels per day comprising 50,000 barrels of synthetic crude, 25,000 barrels of specialty oils and 5,000 barrels of naptha. Construction will be staged for intended start-up in 1976.

Natural Gas

Alberta natural gas production has grown from 331,351,636 Mcf. in 1959 to 1,429,153,042 Mcf. in 1968, a compound growth rate of almost 16% per annum. Deliveries for the first six months of 1969 are up 15.3% over the same period last year. Both domestic and U.S. export markets (the

U.S. accounted for 44% of Alberta's 1968 deliveries) are strong.

Capital expenditures for natural gas processing plants (to make wet and sour gas sweet and dry) over the past four years and estimates for 1969 and 1970 are shown following:

CAPITAL EXPENDITURES
NATURAL GAS PROCESSING PLANTS, ALBERTA
1965 - 1970

Year	Value ($'000)
1965	26,900
1966	44,248
1967	88,044
1968	87,041
1969	80,000*
1970	150,000*

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* "Oilweek" estimates

Active exploration for natural gas is continuing in the Strachan-Ricinus area of west-central Alberta where substantial reserves have recently been discovered.

This discovery, and the rapid growth of U.S. demand coupled with declining U.S. reserves, has prompted the Northern Natural Gas Company of Omaha, through its Canadian affiliate, to make application to remove 2.3 trillion cubic feet of gas from the province for export to the United States over a 25 year period. If approval is granted, the company has proposed the construction of a 900 mile, 36" diameter pipeline to extend from North Branch, Minnesota, to Empress, Alberta. Gas for the line would be supplied by the Strachan-Ricinus and Kaybob South fields and would be transported to Empress via Alberta Gas Trunk Line facilities.

Meanwhile, the Oil and Gas Conservation Board has announced that Trans-Canada Pipelines Limited's existing permit to remove 19.2 trillion cubic feet of gas from the province over the next 25 years will be increased by 2.2 trillion cubic feet.

Coal

Alberta coal production, which has stagnated since the advent of diesel (railway) locomotives nearly two decades ago, has been revived by Japanese demand for coking coal.

In 1968, Alberta coal production totalled 3.9 million tons, valued at $12.6 million. Exports of coking coal to Japan amounted to 0.8 million tons.

By 1971, Alberta producers will be exporting 4.4 million tons of coking coal per year to Japan, valued at approximately $60 million.

The following firms have signed contracts with the Japanese to data:

Company	Contract term	Approximate annual shipments Quantity tons	Approximate annual shipments Value ($'000)	Initial Delivery Year
Canmore Mines Ltd.	10 years	500,000	6,000	1971
Coleman Collieries Ltd.	15 years	870,000	11,000	1971
Luscar Mines Ltd.	15 years	1,000,000	13,500	1970
McIntyre Porcupine Mines Ltd.	15 years	2,000,000	28,000	1970
TOTAL ---------		4,370,000	58,500	

Over their term, the above contracts represent sales valued at almost $1 billion. To supply her fast growing steel industry, it is expected that Japan's coking coal import requirements will double by 1973. It is therefore anticipated that further supply contracts will be awarded to Alberta producers in the near future.

To house the employees and families of McIntyre Porcupine's coal mining operation, the new town of Grande Cache is currently under construction. When completed, the town will have a population of approximately 4,000 persons. It is expected that the 125 employees and families of the Luscar Mines Limited's operation will reside in Hinton. This could lead to a 400-500 population increase for that centre.

The estimated 500 million tons of metallurgical coal reserves at McIntyre's "Smoky River Deposit" in large part prompted construction of the recently completed $100 million, 235 mile, Alberta Resources Railroad.

Smoky River coal will move via the A.R.R. to the C.N.R. mainline at Hinton and on to the west coast port of Vancouver by unit train. Coal from the Luscar Mine (160 miles southwest of Edmonton) will also be shipped via this (C.N.R.) route.

Further markets for Alberta's substantial coal reserves may result from a new process developed by the Alberta Research Council to produce activated charcoal from low volatile bituminous coal such as is found in the Canmore area. It is expected that a plant utilizing this process will be constructed within the next year. Uses of activated carbon include:

water purification, solvent recovery, and the deodorization of food and beverage products.

Other Minerals

Alberta has substantial deposits of gypsum in the Fort McMurray area and in the foothill regions along the Rocky Mountain chain. Because of the low quality and difficulty of access to these deposits, Alberta gypsum users are presently importing their requirements from mines in British Columbia and Manitoba. However, with the addition of one (see page 6 & 7), and possibly two or three new gypsum wallboard plants in the province, gypsum consumption may become large enough to warrant the development of at least one of these deposits.

Similarly, increased consumption may allow for development of Alberta deposits of silica sand. There are potential exploitable deposits at Peace River and Fort McMurray. The major users of silica sand in the province are the oil industry (for oil well fracturing), glass manufacturers, and foundries.

There are currently three salt producers in the province, at Lindbergh, Two Hills, and Fort Saskatchewan. Demand for salt, a basic commodity, will tend to grow with population. Alberta, with massive salt deposits in the eastern region of the province, is in a position to supply this demand.

CONSTRUCTION

Over the past decade the percentage contribution of the construction industry to the total net value of Alberta industrial production has declined from 28.3 to 21.7%. Despite this relative decrease, the net value of construction has increased absolutely by 41.1% over this ten year term.

New and repair construction expenditures in 1969 are above those of 1968.

TOTAL VALUE OF NEW AND REPAIR CONSTRUCTION WORK PERFORMED
Alberta 1967 - 1969

(thousands of dollars)

Building Construction	1967 (1)	1968 (2)	1969 (3)
Residential	244,600	326,600	353,600
Industrial & Commercial	143,025	135,834	159,430
Institutional	175,896	155,651	180,096
Other	59,131	69,318	75,699
Sub-total	622,652	687,403	768,825
Engineering Construction			
Road, Highway & Aerodrome	117,233	87,296	90,804
Railway, Telephone & Telegraph	88,932	72,801	50,519
Gas & Oil Facilities	342,052	408,386	452,301
Other Engineering	177,368	209,507	198,703
Sub-total	725,585	777,990	792,327
GRAND TOTAL	1,348,237	1,465,393	1,561,152

(1) Actual (2) Preliminary (3) Intentions

Provincial government expenditures on roads and highways for the 1969 - 1970 construction year are up marginally from a year ago. The highway budget is broken down as follows: $43 million for highway construction,

$9 million for bridges, $11.5 million for highway maintenance and $27 million in grants to municipalities. As in recent years, major construction projects involve twinning existing undivided highways into four and six land divided thoroughfares.

The rapid annual increases in enrollment experienced by Alberta universities over the past decade are expected to continue. To keep pace, in addition to projects now underway, projected construction expenditures by campus to 1972 are: University of Alberta (Edmonton), $61 million, University of Calgary $43 million, University of Lethbridge, $17.3 million.

Despite higher mortgage rates, residential construction in Alberta has firmed; dwelling starts, (including apartments) for the first eight months of 1969 are up 40.4% over the same period in 1968.

In an effort to slow down the building boom, Finance Minister E. J. Benson in his 1969 spring budget, announced that the depreciation allowance on new commercial construction in the major centres of Ontario, British Columbia and Alberta would be deferred for a period of two years. In Alberta the deferral applies to both Edmonton and Calgary.

The outlook for the construction industry during 1970 is uncertain. It now appears that the Federal Government has seriously embarked on a program of restraint to slow down the overheated Canadian economy. Historically, the construction industry has been one of the first to feel the effects of a change in general economic conditions.

ELECTRIC POWER

To supply forecast demand, the Alberta Power Commission has estimated that Alberta's power generating capability will increase by 2 1/2 times between 1968 and 1978, from 1,892 megawatts to 4,730 megawatts.

Power projects currently under construction include:

Calgary Power:

Big Horn Dam - This hydro power project, 80 miles west of Rocky Mountain House, south of the confluence of the North Saskatchewan and Big Horn Rivers, will cost an estimated $30 million. The dam will have a net generating capability of 100 megawatts and is expected to be in operation by 1972.

The province of Alberta is contributing $5 million to the capital cost of the dam in return for pollution control and water storage benefits the facility will provide. The project comprises a part of the government's long range Prairie River Improvement and Management Evaluation (P.R.I.M.E.) Program to divert a portion of northern water resources to the southern part of the province.

Sundance Plant, Lake Wabamum - Lake Wabamum is surrounded by substantial deposits of low grade coal suitable for firing steam boilers. Calgary Power's existing thermal plant on the north side of the lake has a net generating capability of 570 megawatts.

The new Calgary Power Sundance Plant, currently under construction on the south side of the lake, is expected to have an ultimate net generating capacity of 1,600 megawatts upon final completion around 1980. The first of four generating units, having a capacity of 300 megawatts is being installed for intended start up in 1971.

Canadian Utilities

Battle River - Canadian Utilities existing thermal plant, at Forestburg, 75 miles north east of Red Deer, has a net generating capability of 66 megawatts. A 150 megawatt addition costing $25 million is nearing completion for intended start-up in late 1969.

Grande Cache - A $28 million, 150 megawatt installation is under construction for intended commissioning in 1972. The power installation will be fired with "middlings" coal, a by-product of McIntyre Porcupine's coal preparation operations, and will serve the needs of Grande Cache and the mine. Surplus power will be fed into the provincial power transmission grid.

City of Edmonton

Edmonton Power is installing the first of two gas fired 159 megawatt generating units at its Clover Bar plant, for intended start-up in 1970. It is expected the second unit will be in operation by 1973.

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